

What is claimed is:

1. A lead electrode assembly for subcutaneous
implantation comprising:

an electrode; and

5 a pocket coupled to the electrode for positioning the
lead electrode assembly.

2. The lead electrode assembly of claim 1, wherein the
pocket comprises a bounded region coupled to the electrode.

3. The lead electrode assembly of claim 2, wherein the
bounded region is contiguous.

4. The lead electrode assembly of claim 2, wherein the
15 bounded region has a curved shape.

5. The lead electrode assembly of claim 2, wherein the
pocket further comprises a center and wherein the bounded region
is disposed around the center without entirely enclosing the
20 center.

5 6. The lead electrode assembly of claim 2, wherein the
bounded region forms part of a circumference of a circle.

 7. The lead electrode assembly of claim 1, wherein the
pocket comprises a polymeric material.

10 8. The lead electrode assembly of claim 7, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

 9. The lead electrode assembly of claim 1, wherein the
pocket is substantially planar.

 10. The lead electrode assembly of claim 1, wherein the
pocket is substantially parallel to the electrode.

 11. The lead electrode assembly of claim 1, wherein the
25 lead electrode assembly further comprises a rigid backing layer
coupled between the pocket and the electrode.

5 12. The lead electrode assembly of claim 1, wherein the
lead electrode assembly further comprises an appendage
positioned between the pocket and the electrode.

13. The lead electrode assembly of claim 12, wherein the
10 appendage is fin-shaped.

14. The lead electrode assembly of claim 12, wherein the
appendage is loop-shaped.

15. The lead electrode assembly of claim 12, wherein the
appendage is tube-shaped.

16. The lead electrode assembly of claim 1, wherein the
pocket comprises a periphery and a middle portion surrounded by
20 the periphery.

17. The lead electrode assembly of claim 16, wherein the
bounded region of the pocket comprises a portion of the
periphery.

18. The lead electrode assembly of claim 16, wherein the
electrode is positioned substantially under the pocket.

10 20. The lead electrode assembly of claim 1, wherein the
lead electrode assembly further comprises a molded cover coupled
between the pocket and the electrode.

21. The lead electrode assembly of claim 18, wherein the electrode comprises at least one edge and wherein at least a portion of the bounded region of the pocket is positioned substantially over the at least one edge of the electrode.

22. The lead electrode assembly of claim 1, wherein a first side and a second side of the pocket are substantially straight.

23. The lead electrode assembly of claim 22, wherein the pocket is substantially rectangular in shape.

24. The lead electrode assembly of claim 1, wherein the pocket is substantially rectangular in shape.

5 25. The lead electrode assembly of claim 1, wherein a
first side and a second side of the pocket are substantially
curved in shape.

 26. The lead electrode assembly of claim 25, wherein the
10 pocket is substantially triangular in shape.

 27. The lead electrode assembly of claim 1, wherein the
pocket is substantially triangular in shape.

5 28. The lead electrode assembly of claim 2, wherein the
bounded region of the pocket is attached directly to the
electrode.

20 29. The lead electrode assembly of claim 2, wherein the
lead electrode assembly further comprises a molded cover coupled
to the electrode.

 30. The lead electrode assembly of claim 29, wherein the
molded cover is coupled to the bounded region of the pocket.

25 31. The lead electrode assembly of claim 29, wherein the
molded cover partially covers the electrode

5 32. The lead electrode assembly of claim 31, wherein the
molded cover comprises a skirt that partially covers a bottom
surface of the electrode.

 33. The lead electrode assembly of claim 29, wherein the
10 pocket comprises at least a portion of the molded cover.

 34. The lead electrode assembly of claim 29, wherein the
molded cover comprises a polymeric material.

 35. The lead electrode assembly of claim 34, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
20 thereof.

 36. The lead electrode assembly of claim 1, wherein the
electrode comprises a mesh of metallic material.

25 37. The lead electrode assembly of claim 36, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

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38. The lead electrode assembly of claim 1, wherein the electrode comprises a substantially flat sheet of metallic material.

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39. The lead electrode assembly of claim 38, wherein the metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

40. The lead electrode assembly of claim 1, wherein the electrode is substantially planar.

41. The lead electrode assembly of claim 1, wherein the electrode comprises at least one substantially planar surface.

42. The lead electrode assembly of claim 41, wherein the at least one substantially planar surface has a surface area between approximately 100 square millimeters and approximately 2000 square millimeters.

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43. The lead electrode assembly of claim 1, wherein the electrode is thumbnail shaped.

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49. The lead electrode assembly of claim 44, wherein the lead is between approximately 5 cm and approximately 52 cm in length.

5 50. The lead electrode assembly of claim 49, wherein the
lead is between approximately 5 cm and approximately 30 cm in
length.

10 51. The lead electrode assembly of claim 50, wherein the
lead is between approximately 10 cm and approximately 20 cm in
length.

52. The lead electrode assembly of claim 49, wherein the
lead length is one of a plurality of pre-set lengths.

53. The lead electrode assembly of claim 52, wherein the
pre-set lengths vary by approximately 10 cm.

54. The lead electrode assembly of claim 44, wherein the
lead has a proximal end and a distal end and wherein the
proximal end of the lead is coupled to the electrode.

55. The lead electrode assembly of claim 54, wherein the
lead electrode assembly further comprises a lead fastener
25 coupled between the lead and the electrode.

5 56. The lead electrode assembly of claim 1, wherein the
length of the electrode is not equal to the length of the
pocket.

10 57. The lead electrode assembly of claim 56, wherein the
length of the electrode is less than the length of the pocket.

 58. The lead electrode assembly of claim 1, wherein the
length of the electrode is equal to the length of the pocket.

 59. A lead electrode assembly for use with an implantable
cardioverter-defibrillator subcutaneously implanted outside the
ribcage between the third and twelfth ribs comprising:

 an electrode; and

 a pocket coupled to the electrode for positioning the
lead electrode assembly.

 60. The lead electrode assembly of claim 59, wherein the
pocket comprises a bounded region coupled to the electrode.

25 61. The lead electrode assembly of claim 60, wherein the
bounded region is contiguous.

5 62. The lead electrode assembly of claim 60, wherein the
bounded region has a curved shape.

63. The lead electrode assembly of claim 60, wherein the
pocket further comprises a center and wherein the bounded region
10 is disposed around the center without entirely enclosing the
center.

64. The lead electrode assembly of claim 60, wherein the
bounded region forms part of a circumference of a circle.

65. The lead electrode assembly of claim 59, wherein the
pocket comprises a polymeric material.

66. The lead electrode assembly of claim 65, wherein the
polymeric material is selected from the group consisting
essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

25 67. The lead electrode assembly of claim 59, wherein the
pocket is substantially planar.

5 68. The lead electrode assembly of claim 59, wherein the
pocket is substantially parallel to the electrode.

69. The lead electrode assembly of claim 59, wherein the
lead electrode assembly further comprises a rigid backing layer
10 coupled between the pocket and the electrode.

70. The lead electrode assembly of claim 59, wherein the
lead electrode assembly further comprises an appendage
positioned between the pocket and the electrode.

71. The lead electrode assembly of claim 70, wherein the
appendage is fin-shaped.

72. The lead electrode assembly of claim 70, wherein the
appendage is loop-shaped.
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73. The lead electrode assembly of claim 70, wherein the
appendage is tube-shaped.

25 74. The lead electrode assembly of claim 59, wherein the
pocket comprises a periphery and a middle portion surrounded by
the periphery.

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5 75. The lead electrode assembly of claim 74, wherein the
bounded region of the pocket comprises a portion of the
periphery.

76. The lead electrode assembly of claim 74, wherein the
10 electrode is positioned substantially under the pocket.

77. The lead electrode assembly of claim 76, wherein the
electrode comprises at least one edge and wherein the at least
one edge of the electrode is positioned substantially under a
portion of the periphery of the pocket.

78. The lead electrode assembly of claim 59, wherein the
lead electrode assembly further comprises a molded cover coupled
between the pocket and the electrode.

79. The lead electrode assembly of claim 76, wherein the
electrode comprises at least one edge and wherein at least a
portion of the bounded region of the pocket is positioned
substantially over the at least one edge of the electrode.

80. The lead electrode assembly of claim 59, wherein a
first side and a second side of the pocket are substantially
straight.

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81. The lead electrode assembly of claim 80, wherein the pocket is substantially rectangular in shape.

82. The lead electrode assembly of claim 59, wherein the
10 pocket is substantially rectangular in shape.

83. The lead electrode assembly of claim 59, wherein a first side and a second side of the pocket are substantially curved in shape.

84. The lead electrode assembly of claim 83, wherein the pocket is substantially triangular in shape.

85. The lead electrode assembly of claim 59, wherein the
20 pocket is substantially triangular in shape.

86. The lead electrode assembly of claim 60, wherein the bounded region of the pocket is attached directly to the electrode.

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87. The lead electrode assembly of claim 60, wherein the lead electrode assembly further comprises a molded cover coupled to the electrode.

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88. The lead electrode assembly of claim 87, wherein the molded cover is coupled to the bounded region of the pocket.

89. The lead electrode assembly of claim 87, wherein the
10 molded cover partially covers the electrode

90. The lead electrode assembly of claim 89, wherein the molded cover comprises a skirt that partially covers a bottom surface of the electrode.

91. The lead electrode assembly of claim 87, wherein the pocket comprises at least a portion of the molded cover.

92. The lead electrode assembly of claim 87, wherein the
20 molded cover comprises a polymeric material.

93. The lead electrode assembly of claim 92, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a
25 polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

5 94. The lead electrode assembly of claim 59, wherein the
electrode comprises a mesh of metallic material.

95. The lead electrode assembly of claim 94, wherein the
metallic material is selected from the group consisting
10 essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

96. The lead electrode assembly of claim 59, wherein the
electrode comprises a substantially flat sheet of metallic
material.

97. The lead electrode assembly of claim 96, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
20 platinum, platinum iridium, and mixtures thereof.

98. The lead electrode assembly of claim 59, wherein the
electrode is substantially planar.

25 99. The lead electrode assembly of claim 59, wherein the
electrode comprises at least one substantially planar surface.

5 100. The lead electrode assembly of claim 99, wherein the
at least one substantially planar surface has a surface area
between approximately 100 square millimeters and approximately
2000 square millimeters.

10 101. The lead electrode assembly of claim 59, wherein the
electrode is thumbnail shaped.

102. The lead electrode assembly of claim 59, wherein the
lead electrode assembly further comprises a lead coupled to the
electrode.

103. The lead electrode assembly of claim 102, wherein the
lead comprises one or more electrical conductors electrically
coupled to the electrode.

104. The lead electrode assembly of claim 103, wherein the
lead further comprises an electrically insulating sheath
enclosing the one or more electrical conductors.

25 105. The lead electrode assembly of claim 102, wherein the
lead electrode assembly further comprises a connector coupled to
the lead.

5 106. The lead electrode assembly of claim 105, wherein the
connector is electrically coupled to the electrode.

107. The lead electrode assembly of claim 102, wherein the
lead is between approximately 5 cm and approximately 52 cm in
10 length.

108. The lead electrode assembly of claim 107, wherein the
lead is between approximately 5 cm and approximately 30 cm in
length.

109. The lead electrode assembly of claim 108, wherein the
lead is between approximately 10 cm and approximately 20 cm in
length.

20 110. The lead electrode assembly of claim 107, wherein the
lead length is one of a plurality of pre-set lengths.

111. The lead electrode assembly of claim 110, wherein the
pre-set lengths vary by approximately 10 cm.

25 112. The lead electrode assembly of claim 102, wherein the
lead has a proximal end and a distal end and wherein the
proximal end of the lead is coupled to the electrode.

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113. The lead electrode assembly of claim 112, wherein the lead electrode assembly further comprises a lead fastener coupled between the lead and the electrode.

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114. The lead electrode assembly of claim 59, wherein the length of the electrode is not equal to the length of the pocket.

115. The lead electrode assembly of claim 114, wherein the length of the electrode is less than the length of the pocket.

116. The lead electrode assembly of claim 59, wherein the length of the electrode is equal to the length of the pocket.

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117. A lead electrode assembly for subcutaneous implantation in a patient's posterior thorax from an incision in the skin covering the patient's anterior thorax comprising:

an electrode; and

a pocket coupled to the electrode for positioning the lead electrode assembly.

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118. The lead electrode assembly of claim 117, wherein the pocket comprises a bounded region coupled to the electrode.

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119. The lead electrode assembly of claim 118, wherein the bounded region is contiguous.

120. The lead electrode assembly of claim 118, wherein the
10 bounded region has a curved shape.

121. The lead electrode assembly of claim 118, wherein the pocket further comprises a center and wherein the bounded region is disposed around the center without entirely enclosing the center.

122. The lead electrode assembly of claim 118, wherein the bounded region forms part of a circumference of a circle.

123. The lead electrode assembly of claim 117, wherein the pocket comprises a polymeric material.

124. The lead electrode assembly of claim 123, wherein the polymeric material is selected from the group consisting
25 essentially of a polyurethane, a polyamide, a polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

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125. The lead electrode assembly of claim 117, wherein the pocket is substantially planar.

126. The lead electrode assembly of claim 117, wherein the
10 pocket is substantially parallel to the electrode.

127. The lead electrode assembly of claim 117, wherein the lead electrode assembly further comprises a rigid backing layer coupled between the pocket and the electrode.

128. The lead electrode assembly of claim 117, wherein the lead electrode assembly further comprises an appendage positioned between the pocket and the electrode.

129. The lead electrode assembly of claim 128, wherein the appendage is fin-shaped.

130. The lead electrode assembly of claim 128, wherein the appendage is loop-shaped.

131. The lead electrode assembly of claim 128, wherein the appendage is tube-shaped.

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137. The lead electrode assembly of claim 134, wherein the electrode comprises at least one edge and wherein at least a portion of the bounded region of the pocket is positioned substantially over the at least one edge of the electrode.

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138. The lead electrode assembly of claim 117, wherein a first side and a second side of the pocket are substantially straight.

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139. The lead electrode assembly of claim 138, wherein the pocket is substantially rectangular in shape.

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140. The lead electrode assembly of claim 117, wherein the pocket is substantially rectangular in shape.

141. The lead electrode assembly of claim 117, wherein a first side and a second side of the pocket are substantially curved in shape.

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142. The lead electrode assembly of claim 141, wherein the pocket is substantially triangular in shape.

143. The lead electrode assembly of claim 117, wherein the pocket is substantially triangular in shape.

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144. The lead electrode assembly of claim 118, wherein the bounded region of the pocket is attached directly to the electrode.

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145. The lead electrode assembly of claim 118, wherein the lead electrode assembly further comprises a molded cover coupled to the electrode.

10 146. The lead electrode assembly of claim 145, wherein the molded cover is coupled to the bounded region of the pocket.

147. The lead electrode assembly of claim 145, wherein the molded cover partially covers the electrode

148. The lead electrode assembly of claim 147, wherein the molded cover comprises a skirt that partially covers a bottom surface of the electrode.

20 149. The lead electrode assembly of claim 145, wherein the pocket comprises at least a portion of the molded cover.

150. The lead electrode assembly of claim 145, wherein the molded cover comprises a polymeric material.

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151. The lead electrode assembly of claim 150, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a

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5 polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

152. The lead electrode assembly of claim 117, wherein the
10 electrode comprises a mesh of metallic material.

153. The lead electrode assembly of claim 152, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

154. The lead electrode assembly of claim 117, wherein the
electrode comprises a substantially flat sheet of metallic
material.

155. The lead electrode assembly of claim 154, wherein the
metallic material is selected from the group consisting
essentially of titanium, nickel alloys, stainless steel alloys,
platinum, platinum iridium, and mixtures thereof.

156. The lead electrode assembly of claim 117, wherein the
electrode is substantially planar.

5 157. The lead electrode assembly of claim 117, wherein the
electrode comprises at least one substantially planar surface.

158. The lead electrode assembly of claim 157, wherein the
at least one substantially planar surface has a surface area
10 between approximately 100 square millimeters and approximately
2000 square millimeters.

159. The lead electrode assembly of claim 117, wherein the
electrode is thumbnail shaped.

160. The lead electrode assembly of claim 117, wherein the
lead electrode assembly further comprises a lead coupled to the
electrode.

20 161. The lead electrode assembly of claim 160, wherein the
lead comprises one or more electrical conductors electrically
coupled to the electrode.

25 162. The lead electrode assembly of claim 161, wherein the
lead further comprises an electrically insulating sheath
enclosing the one or more electrical conductors.

163. The lead electrode assembly of claim 160, wherein the lead electrode assembly further comprises a connector coupled to the lead.

164. The lead electrode assembly of claim 163, wherein the
10 connector is electrically coupled to the electrode.

165. The lead electrode assembly of claim 160, wherein the lead is between approximately 5 cm and approximately 52 cm in length.

166. The lead electrode assembly of claim 165, wherein the lead is between approximately 5 cm and approximately 30 cm in length.

167. The lead electrode assembly of claim 166, wherein the lead is between approximately 10 cm and approximately 20 cm in length.

168. The lead electrode assembly of claim 165, wherein the
25 lead length is one of a plurality of pre-set lengths.

169. The lead electrode assembly of claim 168, wherein the pre-set lengths vary by approximately 10 cm.

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170. The lead electrode assembly of claim 160, wherein the lead has a proximal end and a distal end and wherein the proximal end of the lead is coupled to the electrode.

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171. The lead electrode assembly of claim 170, wherein the lead electrode assembly further comprises a lead fastener coupled between the lead and the electrode.

172. The lead electrode assembly of claim 117, wherein the length of the electrode is not equal to the length of the pocket.

173. The lead electrode assembly of claim 172, wherein the length of the electrode is less than the length of the pocket.

174. The lead electrode assembly of claim 117, wherein the length of the electrode is equal to the length of the pocket.

175. An implantable cardioverter-defibrillator for subcutaneous positioning between the third rib and the twelfth rib within a patient, the implantable cardioverter-defibrillator comprising:

a housing; and

5 a lead electrode assembly coupled to the housing,
wherein the lead electrode assembly comprises:
an electrode; and
a pocket coupled to the electrode for positioning the
lead electrode assembly.

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176. The implantable cardioverter-defibrillator of claim
175, wherein the pocket comprises a bounded region coupled to
the electrode.

177. The implantable cardioverter-defibrillator of claim
176, wherein the bounded region is contiguous.

178. The implantable cardioverter-defibrillator of claim
176, wherein the bounded region has a curved shape.

179. The implantable cardioverter-defibrillator of claim
176, wherein the pocket further comprises a center and wherein
the bounded region is disposed around the center without
entirely enclosing the center.

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180. The implantable cardioverter-defibrillator of claim
176, wherein the bounded region forms part of a circumference of
a circle.

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181. The implantable cardioverter-defibrillator of claim 175, wherein the pocket comprises a polymeric material.

182. The implantable cardioverter-defibrillator of claim 10 181, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

183. The implantable cardioverter-defibrillator of claim 175, wherein the pocket is substantially planar.

184. The implantable cardioverter-defibrillator of claim 20 175, wherein the pocket is substantially parallel to the electrode.

185. The implantable cardioverter-defibrillator of claim 25 175, wherein the lead electrode assembly further comprises a rigid backing layer coupled between the pocket and the electrode.

5 186. The implantable cardioverter-defibrillator of claim
175, wherein the lead electrode assembly further comprises an
appendage positioned between the pocket and the electrode.

187. The implantable cardioverter-defibrillator of claim
10 186, wherein the appendage is fin-shaped.

188. The implantable cardioverter-defibrillator of claim
186, wherein the appendage is loop-shaped.

189. The implantable cardioverter-defibrillator of claim
186, wherein the appendage is tube-shaped.

190. The implantable cardioverter-defibrillator of claim
175, wherein the pocket comprises a periphery and a middle
20 portion surrounded by the periphery.

191. The implantable cardioverter-defibrillator of claim
190, wherein the bounded region of the pocket comprises a
portion of the periphery.

25 192. The implantable cardioverter-defibrillator of claim
190, wherein the electrode is positioned substantially under the
pocket.

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193. The implantable cardioverter-defibrillator of claim 192, wherein the electrode comprises at least one edge and wherein the at least one edge of the electrode is positioned substantially under a portion of the periphery of the pocket.

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194. The implantable cardioverter-defibrillator of claim 175, wherein the lead electrode assembly further comprises a molded cover coupled between the pocket and the electrode.

195. The implantable cardioverter-defibrillator of claim 192, wherein the electrode comprises at least one edge and wherein at least a portion of the bounded region of the pocket is positioned substantially over the at least one edge of the electrode.

196. The implantable cardioverter-defibrillator of claim 175, wherein a first side and a second side of the pocket are substantially straight.

25 197. The implantable cardioverter-defibrillator of claim 196, wherein the pocket is substantially rectangular in shape.

5 198. The implantable cardioverter-defibrillator of claim
175, wherein the pocket is substantially rectangular in shape.

199. The implantable cardioverter-defibrillator of claim
175, wherein a first side and a second side of the pocket are
10 substantially curved in shape.

200. The implantable cardioverter-defibrillator of claim
199, wherein the pocket is substantially triangular in shape.

201. The implantable cardioverter-defibrillator of claim
175, wherein the pocket is substantially triangular in shape.

202. The implantable cardioverter-defibrillator of claim
176, wherein the bounded region of the pocket is attached
20 directly to the electrode.

203. The implantable cardioverter-defibrillator of claim
176, wherein the lead electrode assembly further comprises a
molded cover coupled to the electrode.

25 204. The implantable cardioverter-defibrillator of claim
203, wherein the molded cover is coupled to the bounded region
of the pocket.

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205. The implantable cardioverter-defibrillator of claim
203, wherein the molded cover partially covers the electrode

206. The implantable cardioverter-defibrillator of claim
10 205, wherein the molded cover comprises a skirt that partially
covers a bottom surface of the electrode.

207. The implantable cardioverter-defibrillator of claim
203, wherein the pocket comprises at least a portion of the
molded cover.

208. The implantable cardioverter-defibrillator of claim
203, wherein the molded cover comprises a polymeric material.

209. The implantable cardioverter-defibrillator of claim
208, wherein the polymeric material is selected from the group
consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
25 thereof.

5 210. The implantable cardioverter-defibrillator of claim
175, wherein the electrode comprises a mesh of metallic
material.

10 211. The implantable cardioverter-defibrillator of claim
210, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

15 212. The implantable cardioverter-defibrillator of claim
175, wherein the electrode comprises a substantially flat sheet
of metallic material.

20 213. The implantable cardioverter-defibrillator of claim
212, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

25 214. The implantable cardioverter-defibrillator of claim
175, wherein the electrode is substantially planar.

 215. The implantable cardioverter-defibrillator of claim
175, wherein the electrode comprises at least one substantially
planar surface.

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216. The implantable cardioverter-defibrillator of claim 215, wherein the at least one substantially planar surface has a surface area between approximately 100 square millimeters and approximately 2000 square millimeters.

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217. The implantable cardioverter-defibrillator of claim 175, wherein the electrode is thumbnail shaped.

218. The implantable cardioverter-defibrillator of claim 175, wherein the lead electrode assembly further comprises a lead coupled between the electrode and the housing.

219. The implantable cardioverter-defibrillator of claim 218, wherein the lead comprises one or more electrical conductors electrically coupled to the electrode.

220. The implantable cardioverter-defibrillator of claim 219, wherein the lead further comprises an electrically insulating sheath enclosing the one or more electrical conductors.

5 221. The implantable cardioverter-defibrillator of claim
218, wherein the lead electrode assembly further comprises a
connector coupled to the lead.

10 222. The implantable cardioverter-defibrillator of claim
221, wherein the connector is electrically coupled to the
electrode.

20 223. The implantable cardioverter-defibrillator of claim
218, wherein the lead is between approximately 5 cm and
approximately 52 cm in length.

25 224. The implantable cardioverter-defibrillator of claim
223, wherein the lead is between approximately 5 cm and
approximately 30 cm in length.

 225. The implantable cardioverter-defibrillator of claim
224, wherein the lead is between approximately 10 cm and
approximately 20 cm in length.

30 226. The implantable cardioverter-defibrillator of claim
223, wherein the lead length is one of a plurality of pre-set
lengths.

5 227. The implantable cardioverter-defibrillator of claim
226, wherein the pre-set lengths vary by approximately 10 cm.

228. The implantable cardioverter-defibrillator of claim
218, wherein the lead has a proximal end and a distal end and
10 wherein the proximal end of the lead is coupled to the
electrode.

229. The implantable cardioverter-defibrillator of claim
228, wherein the lead electrode assembly further comprises a
lead fastener coupled between the lead and the electrode.

230. The implantable cardioverter-defibrillator of claim
175, wherein the length of the electrode is not equal to the
length of the pocket.

231. The implantable cardioverter-defibrillator of claim
230, wherein the length of the electrode is less than the length
of the pocket.

25 232. The implantable cardioverter-defibrillator of claim
175, wherein the length of the electrode is equal to the length
of the pocket.

5 233. A lead electrode assembly manipulation tool
comprising:

 a paddle; and

 a rod connected to the paddle.

10 234. The lead electrode assembly manipulation tool of claim
223, wherein the paddle is substantially planar.

 235. The lead electrode assembly manipulation tool of claim
223, wherein the paddle has a substantially circular shape.

 236. The lead electrode assembly manipulation tool of claim
223, wherein the paddle has a proximal end and a distal end and
wherein the proximal end of the paddle is attached to the rod.

20 237. The lead electrode assembly manipulation tool of claim
223, wherein the rod has a first end and a second end and
wherein the first end of the rod is connected to the paddle.

 238. The lead electrode assembly manipulation tool of claim
25 237, wherein lead electrode assembly manipulation tool further
comprises a handle connected to the second end of the rod.

5 239. The lead electrode assembly manipulation tool of claim
233, wherein the rod is curved.

240. The lead electrode assembly manipulation tool of claim
233, wherein the paddle comprises a metallic material.

10

241. The lead electrode assembly manipulation tool of claim
240, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

242. The lead electrode assembly manipulation tool of claim
233, wherein the paddle comprises a polymeric material.

243. The lead electrode assembly manipulation tool of claim
242, wherein the polymeric material is selected from the group
consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

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244. The lead electrode assembly manipulation tool of claim
233, wherein the rod comprises a metallic material.

5 245. The lead electrode assembly manipulation tool of claim
244, wherein the metallic material is selected from the group
consisting essentially of titanium, nickel alloys, stainless
steel alloys, platinum, platinum iridium, and mixtures thereof.

10 246. The lead electrode assembly manipulation tool of claim
233, wherein the rod comprises a polymeric material.

247. The lead electrode assembly manipulation tool of claim
246, wherein the polymeric material is selected from the group
consisting essentially of a polyurethane, a polyamide, a
polyetheretherketone (PEEK), a polyether block amide (PEBA), a
polytetrafluoroethylene (PTFE), a silicone, and mixtures
thereof.

20 248. A method for surgically implanting a lead electrode
assembly subcutaneously outside a patient's ribcage, the method
comprising the steps of:

 providing a lead electrode assembly having a lead and a
pocket;

25 providing a lead electrode assembly manipulation tool;
 creating a subcutaneous path outside the ribcage;

 capturing the lead electrode assembly with the lead
electrode assembly manipulation tool;

5 moving the lead electrode assembly through the path; and
releasing the lead electrode assembly from the lead
electrode assembly manipulation tool.

249. The method of claim 248, wherein the step of creating
10 a subcutaneous path outside the ribcage further comprises the
steps of:

providing a hemostat;

creating an incision in the thoracic region of the patient;

and

creating the subcutaneous path by moving the hemostat
between the ribcage and the skin.

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250. The method of claim 249, wherein the step of creating
the subcutaneous path by moving the hemostat between the ribcage
20 and the skin further comprises the step of:

moving the hemostat laterally and posteriorly around the
side of the patient until the subcutaneous path terminates at a
termination point such that if a straight line were drawn from
the incision to the termination point, the line would intersect
25 the heart of the patient.

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10 termination point within 10 cm of the spine of the patient
between the third and twelfth rib.

252. The method of claim 249, wherein the incision in the thoracic region of the patient is in the anterior of the thorax.

253. The method of claim 249, wherein the lead electrode assembly manipulation tool comprises a rod and a paddle. .

254. The method of claim 253, wherein the step of capturing the lead electrode assembly with the lead electrode assembly manipulation tool further comprises the step of:

sliding the paddle of the lead electrode assembly into the pocket of the lead electrode assembly manipulation tool.

25 255. The method of claim 253, wherein the step of capturing
the lead electrode assembly with the lead electrode assembly
manipulation tool further comprises the step of:

5 holding the lead of the lead electrode assembly still
relative to the rod of the lead electrode assembly manipulation
tool.

256. The method of claim 253, wherein the step of capturing
10 the lead electrode assembly with the lead electrode assembly
manipulation tool further comprises the step of:

holding the lead of the lead electrode assembly against the
rod of the lead electrode assembly manipulation tool.

257. The method of claim 253, wherein the step of releasing
the lead electrode assembly from the lead electrode assembly
manipulation tool further comprises the step of:

allowing the lead of the lead electrode assembly to move
relative to the rod of the lead electrode assembly manipulation
20 tool.

258. A subcutaneous implantable cardioverter-defibrillator
kit for use in surgically implanting a subcutaneous implantable
cardioverter-defibrillator and a lead electrode assembly within
25 a patient comprising:

a tray; and

a lead electrode assembly having a pocket stored in the
tray.

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259. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a lead electrode assembly manipulation tool having a paddle,
10 wherein the lead electrode assembly manipulation tool is stored in the tray.

260. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a subcutaneous implantable cardioverter-defibrillator, wherein the subcutaneous implantable cardioverter-defibrillator is stored in the tray.

261. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a medical adhesive, wherein the medical adhesive is stored in the tray.

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262. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous

5 implantable cardioverter-defibrillator kit further comprises an
anesthetic, wherein the anesthetic is stored in the tray.

263. The subcutaneous implantable cardioverter-
defibrillator kit of claim 258, wherein the subcutaneous
10 implantable cardioverter-defibrillator kit further comprises a
tube of mineral oil, wherein the tube of mineral oil is stored
in the tray.

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